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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/273,468

03/22/1999

VLADIMIR VOLOKH

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27130

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01/12/2005

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EXAMINER

TSAI, HENRY

ART UNIT

PAPER NUMBER

2183

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/273,468	Applicant(s) VOLOKH, VLADIMIR	
	Examiner Henry W.H. Tsai	Art Unit 2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/22/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- | | |
|---|--|
| 15) <input type="checkbox"/> Notice of References Cited (PTO-892) | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 20) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 11-14, and 16-19 are rejected under 35 U.S.C. 102(e)

as being anticipated by Guehring et al. (U.S. Patent No. 6,213,692), herein referred to as Guehring et al.'692.

Referring to claims 11 and 16, Guehring et al.'692 discloses as claimed a rotary multi-tooth milling cutter (1, see Fig. 1, note a milling cutter is an intended use as indicated in col. 1, lines 3-5 in accordance with the preamble of claim 1) with at least one tooth including a lateral cutting edge (22, at the periphery of flute 4 or 5, see Fig. 2 and see also col. 3, line 53 regarding the reference 22 is defined as a minor cutting edge. Note the cutting edges 9 and 22 merge at the periphery of flute 4 or 5, the merged edge is also equivalent to a lateral cutting edge as claimed) which rotates about a central cutter axis (27, see Fig. 1) and cuts generally parallel thereto (since the surface of a cut hole is parallel to the central cutter axis 27), the tooth further including a tooth face (8, or 9 see Fig. 2) between the cutting edge (22, at the periphery of flute 4 or 5, see Fig. 2) and the central cutter axis (27, see Fig. 1), the tooth face (the face including 8 or 9 see Fig. 2) comprising: at least two sections between the cutting edge and central cutter axis, a first section (curved convex ridge near 22, see Fig. 2) nearest the cutting edge (22, at the periphery of flute 4 or 5,

see Fig. 2) being convex and the second section (groove 18
portion, see Fig. 2) being concave.

As to claims 13 and 18, Guehring et al.'692 also discloses:
the first section (curved convex ridge near 22, see Fig. 2)
blends tangentially into the second section (the groove 18
portion next to the curved convex ridge near 22, see Fig. 2).

As to claims 14 and 19, Guehring et al.'692 also discloses:
including a concave chip-breaking section (the groove 18 portion
next to the curved convex ridge near 22, see Fig. 2) located
between the first (curved convex ridge near 22, see Fig. 2) and
second (the second groove 18 portion counted from the periphery
of the tool 1, see Fig. 2) sections of the tooth face.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which
forms the basis for all obviousness rejections set forth in this
Office action:

(a) A patent may not be obtained though the invention is
not identically disclosed or described as set forth in
section 102 of this title, if the differences between the
subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been
obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject

matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guehring et al.'692 in view of Noda et al. (U.S. Patent No. 5,454,670), herein referred to as Noda et al.'670.

Guehring et al.'692 discloses the claimed invention except for explicitly showing: the first section being smaller in length than the second section in the tooth face.

Noda et al.'670 discloses a rotary cutting tool (1, see Fig. 7) comprising the first section (14 see Fig. 5(a)) being smaller in length than the second section (the section with radius of curvature R1, see Fig. 5(a)).

Guehring et al.'692's second section (groove 18 portion, see Fig. 2) provides a small area for chip breaking. It will be desirable to have a larger area of chip breaking in order to smooth the chip removal.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Guehring et al.'692's tool to comprise the first section being smaller in length than the second section in the tooth face, as taught by Noda et al.'670, in order to increase the chip breaking area to

facilitate the chip removal during the cutting process for the Guehring et al.'692's device.

Further, as shown in re Rose, 105 USPQ 237 (CCPA 1955), to make changes in size/range generally does not provide patentable weight to the claimed invention.

Response to Arguments

6. Applicant's arguments filed 11/22/04 have been fully considered but they are not deemed to be persuasive.

Applicants argue that "As noted by the Examiner, the Guehring et al. reference categorizes itself as relating to "a cutting tool such as a drill, milling cutter, screw tap, reamer or core drill in accordance with the preamble of claim 1" (Col. 1 lines 3-5). It is respectfully asserted that none of these tools includes a lateral cutting edge, which rotates about a central cutter axis and cuts generally parallel thereto, as recited by independent claims 11 and 16" (page 3, lines 7-11).

Examiner disagrees with Applicants. As set forth in the art rejections above, Guehring et al.'692's cutting tool discloses a lateral cutting edge (22, at the periphery of flute 4 or 5, see Fig. 2 and see also col. 3, line 53 regarding the reference 22 is defined as a minor cutting edge. Note the cutting edges 9 and 22 merge at the periphery of flute 4 or 5, the merged edge is also equivalent to a lateral cutting edge as claimed) which rotates about a central cutter axis (27, see Fig. 1) and cuts generally parallel thereto (since the surface of a cut hole is parallel to the central cutter axis 27).

As to claims 11 and 16, Applicants also argue that "accordingly, although element 22 as shown in Fig. 2 is referred to by Guehring et al. as a "minor cutting edge", it is clearly evident from the above commonly accepted descriptions and figures of Burghardt and Oberg, that element 22 of Guehring must refer to the margin of the drill and not to a cutting edge of the drill. A cutting edge of the Guehring drill may be the portion at the point of the drill (e.g., 8 and 9 in Fig. 2). Thus, element 22 as shown in Fig. 2 of Guehring et al. is clearly not "a lateral cutting edge, which rotates about a central cutter axis and cuts generally parallel thereto", as recited by independent claims 11 and 16" (page 4, lines 16-23).

Examiner disagrees with Applicants. Again, as set forth in the art rejections above, Guehring et al.'692's cutting tool discloses, as claimed, a lateral cutting edge (22, at the periphery of flute 4 or 5, see Fig. 2 and see also col. 3, line 53 regarding the reference 22 is defined as a minor cutting edge. Note the cutting edges 9 and 22 merge at the periphery of flute 4 or 5, the merged edge is also equivalent to a lateral cutting edge as claimed) which rotates about a central cutter axis (27, see Fig. 1) and cuts generally parallel thereto (since the surface of a cut hole is parallel to the central cutter axis 27).

As to claims 15 and 20, Applicants also argue that "specifically, Noda et al., like Guehring, fails to teach a rotary multi-tooth milling cutter with at least one tooth including a lateral cutting edge which rotates about a central cutter axis and cuts generally parallel thereto, the tooth face comprising at least two sections between the cutting edge and central cutter axis, a first section nearest the cutting edge being convex and the second section being concave" (page 5, lines 21-25). Examiner disagrees with Applicants. As set forth in the art rejections above, Guehring et al.'692 discloses the claimed invention except for explicitly showing: the first section being smaller in length than the second section in the

tooth face. Noda et al.'670 discloses a rotary cutting tool (1, see Fig. 7) comprising the first section (14 see Fig. 5(a)) being smaller in length than the second section (the section with radius of curvature R1, see Fig. 5(a)). Guehring et al.'692's second section (groove 18 portion, see Fig. 2) provides a small area for chip breaking. It will be desirable to have a larger area of chip breaking in order to smooth the chip removal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Guehring et al.'692's tool to comprise the first section being smaller in length than the second section in the tooth face, as taught by Noda et al.'670, in order to increase the chip breaking area to facilitate the chip removal during the cutting process for the Guehring et al.'692's device. Noda et al.'670's reference is cited to show the teaching of the first section (14 see Fig. 5(a)) being smaller in length than the second section (the section with radius of curvature R1, see Fig. 5(a)). Regarding the limitations of "a rotary multi-tooth milling cutter with at least one tooth including a lateral cutting edge which rotates about a central cutter axis and cuts generally parallel thereto, the tooth face comprising at least two sections between the cutting edge and central cutter axis, a first section nearest

the cutting edge being convex and the second section being concave", Guehring et al.'692 already discloses them as set forth in the 102(e) rejections to claims 11 and 16 above.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (571) 272-4176. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (571) 272-4162. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC central telephone number, 571-272-2100.

9. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into **the Group at fax number: 703-872-9306**. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.



HENRY W. H. TSAI
PRIMARY EXAMINER

January 5, 2005